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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,736	02/19/2004	Yoshiharu Doi	65933-070	3298

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EXAMINER	
ALAM, FAYYAZ	
ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,736	DOI, YOSHIHARU	
	Examiner	Art Unit	
	FAYYAZ ALAM	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claims 2-7 and 10-24 is withdrawn in view of the newly discovered reference(s) and rejections. Rejections based on the newly cited reference(s) follow.

Response to Arguments

Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Claim 9 is objected to because of the following informalities: replace “part” with “party”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-7,9-17, and 18-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2, 11, and 18 recite the limitation "the directions" in lines 7, 6, and 7, respectively. There is insufficient antecedent basis for this limitation in the claim.

Claims 2, 11, and 18 recite the limitation "the processings" in line. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the direction" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the direction" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2-4, 10-13, and 18- 20 are rejected under 35 U.S.C. 102(e) as being anticipated by **Hind et al. (USPN 2004/0203908)**.

Consider **claim 10**, Hind discloses a transmission method in which a plurality of virtual terminal apparatuses are assumed which are different from a terminal apparatus which is a targeted communication party (see abstract; figs. 2-3,7 and associated text;

[0034-0042;0047]), which generates a transmission weight vector used in transmitting a predetermined signal to a terminal apparatus, which is a targeted communication party, from a received response vector of the targeted terminal apparatus and a virtual response vector of one of the plurality of virtual terminal apparatuses (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]), and which performs a control in such a manner that the virtual response vector is changed, as appropriate, to a virtual response vector having a different value from the virtual response vector so as to change the direction in which the virtual terminal apparatus exists.

Consider **claims 2, 11, and 18**, Hind discloses a radio apparatus, including: a computing unit which computes a received response vector of a terminal apparatus which is a targeted communication party, based on signals received from the targeted terminal apparatus (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]); an acquiring unit which acquires a virtual response vector of one of a plurality of virtual terminal apparatuses assumed such that the directions in which the plurality of virtual terminal apparatuses exist are mutually different (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]); a generator which generates a transmission weight vector based on the received response vector computed by said computing unit and the virtual response vector acquired by said acquiring unit (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]); and a transmitter which transmits a predetermined signal to the targeted terminal apparatus based on the transmission weight vector generated by said generator (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]), wherein said acquiring unit acquires again, as appropriate, a virtual

response vectors vector such that the direction in which the virtual terminal apparatus exists is changed, and the thus reacquired virtual response vector is again subject to the processings by said generator and said transmitter.

Consider **claims 3, 12, and 19** as applied to respective claims, Hind discloses wherein said acquiring unit reacquires, as appropriate, a virtual response vector whose value of correlation with the received response vector computed by said computing unit is less than or equal to a predetermined threshold' value, and the thus reacquired virtual response vector is again subject to the processings by said generator and said transmitter (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]).

Consider **claims 4, 13, and 20** as applied to respective claims, Hind discloses wherein said acquiring unit further includes: a storage which stores a plurality of virtual response vectors whose values of mutual correlation therewith are less than or equal to a predetermined threshold value; and a selector which selects a virtual response vector from the plurality of virtual response vectors stored in said storage (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hind et al. (USPN 2004/0203908)** in view of **Ahl et al. (USPN 5,448,753)**.

Consider claims 1, 8, and 9, Hind discloses a radio apparatus characterized in that: a plurality of virtual terminal apparatuses are assumed which are different from a terminal apparatus which is a targeted communication party (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]); an antenna's directional pattern is formed such that signal strength in the direction of one of the plurality of virtual terminal apparatuses is relatively small (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]); and a signal is transmitted to the terminal apparatus which is a targeted communication party to prevent each of the plurality of virtual terminal apparatuses from continuously receiving a signal.

In the related field of endeavor, Ahl discloses antenna patterns such that the directional patterns are varied by changing said one of the plurality of apparatuses at predetermined intervals (see figs. 9-10 and 13-20 and associated text; abstract).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Hind with the teachings of Ahl in order to minimize and avoid interferences.

Claims 5-7, 14-17, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hind et al. (USPN 2004/0203908)**.

Consider **claims 5, 14, and 21** as applied to respective claims, Hind discloses further including: a measuring unit which measures the intensity of a signal received from the targeted terminal apparatus; and an intensity determining unit which instructs said acquiring unit to switch to the virtual response vector whose value of correlation with the received response vector computed by said computing unit becomes less than or equal to a predetermined threshold value (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]).

However, Hind does not explicitly disclose switch to the vector if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

Nevertheless, it would be obvious to a person of ordinary skill in the art to switch to the vector if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value in order to determine another intercepting or

unintended communication terminal by regularly switching and not dwelling on a single intercepting communication terminal.

Consider **claims 6, 15, and 22** as applied to respective claims, Hind discloses further including: a measuring unit which measures the intensity of a signal received from the targeted terminal apparatus; and an intensity determining unit which instructs said acquiring unit transmitter to increase the intensity of signals to be transmitted to the targeted terminal apparatus (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]).

However, Hind does not explicitly disclose switch to the vector if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

Nevertheless, it would be obvious to a person of ordinary skill in the art to increase the signal strength if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value in order to determine another intercepting or unintended communication terminal by regularly switching and not dwelling on a single intercepting communication terminal.

Consider **claims 7, 16, 17, 23, and 24** as applied to respective claims, Hind discloses wherein said intensity determining unit estimates the signal strength value of

the targeted terminal apparatus from a value of correlation between the received response vector and the virtual response vector (see abstract; figs. 2-3,7 and associated text; [0034-0042;0047]).

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Fayyaz Alam whose telephone number is (571) 270-1102. The Examiner can normally be reached on Monday-Friday from 9:30am to 7:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Fayyaz Alam

February 21, 2009

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618